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Claims

1. A composition comprising an adhesive agent and dispersed therein adhesion-deactivating thermoexpandable microcapsules.

2. A composition according to Claim 1 wherein the microcapsules each comprising a shell, encapsulate at least one expandable gas or volatile expandable agent or an explosive material.

3. A composition according to Claim 2 wherein the shell is composed of a polymer.

4. A composition according to any preceding claim wherein the adhesive agent is a urethane or polyurethane or polyvinylchloride or a MS polymer.

5. A composition according to any preceding claim wherein the thermoexpandable capsules are microspheres or hollow fibres in the form of a powder.

6. A composition according to Claim 5 wherein the powder is provided with the adhesive agent in a pre-mixed form in a container.

7. A composition according to any of Claims 1-5 wherein the composition is formed at the time of, or shortly before, its use.

8. A composition according to Claim 7 wherein formation of the composition occurs within a dispensing device or at a point of exit therefrom.

9. A composition according to any preceding claim which further includes a fast cure agent or catalyst, whereby the adhesive composition is rapidly cured or set.

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10. A composition according to any preceding claim which further includes a colouring agent so that the cured composition is black.

11. A composition according to any preceding claim wherein the microcapsules encapsulate more than one material.

12. A composition according to Claim 11 wherein the additional material is selected from one or more of the group consisting of an expanding agent, an agent capable of sublimation, water, an explosive material or an activator agent.

13. A composition according to either Claim 11 or 12 wherein the microcapsules encapsulate different agents, either separately or in combination.

14. A composition according to any of claims 11-13 comprising intact expanded microspheres and/or microcapsules which have released their contents into the composition.

15. A composition according to any preceding claim wherein the microsphere's diameter is in the range 10 to 120 μm.

16. A composition according to any preceding claim wherein the microcapsule shell thickness is in the range 3 to 7 μm.

17. A composition according to any preceding claim wherein the microcapsules are present in the range of 1-30% by volume

18. A composition according to Claim 17 wherein the microcapsules are present in the range of 2-10% by volume.

19. A composition according to any preceding claim wherein the composition is activated by heat in a heat activation range of 80-170° C.

20. A composition according to Claim 19 wherein the composition is activated by heat in a heat activation range of 120-150° C.

21. A composition according to any preceding claim comprising a mixture of microcapsules of different diameter or shell thickness or of differing heat activation temperatures or different expanding coefficients.

22. Use of a composition comprising an adhesive agent and dispersed therein adhesion-deactivating thermoexpandable microcapsules for fixing glazing.

23. Use of a composition according to Claim 22 wherein the composition further including any one or more of the features recited in Claims 2-21.

24. A composition comprising a primer and dispersed therein adhesion-deactivating thermoexpandable microcapsules.

25. A composition according to Claim 24 further including any one or more of the features of Claims 2-21.

26. Use of a composition comprising a primer and dispersed therein adhesion-deactivating thermoexpandable microcapsules as a glazing adhesive.

27. Use of a composition according to Claim 26 including any one or more of the features of Claims 2-21.

28. A composition comprising adhesion-deactivating microcapsules for use as a glazing adhesive.

29. A method of installing a vehicle windscreen or fixed glazing comprising the steps of:

(i) placing a windscreen flush against a window aperture rim of a vehicle;

(ii) applying the composition according to any of Claims 1-21 or Claims 24, 25 or 28 around a peripheral area of the windscreen; and

(iii) allowing sufficient time for the adhesive to cure or primer to dry.

30. A method of removing a vehicle windscreen or fixed glazing comprising the steps of:

(i) applying a heat source to the composition according to any one of claims 1 to 21, 24, 25 or 28 wherein the heat applied is sufficient to cause thermoexpansion of the microcapsules and thus weaken the adhesive cohesion and interface bonds of the composition; and

(ii) removing the windscreen from the main vehicle body.

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